

600Vdc High Input Voltage, 3kW, Industrial Quality Step-down DC-DC Regulator BUR 3K-F3W Series

- High input voltage
- Wide DC-input voltage range
- Rugged field-proven topology
- Cooling by internal fans
- Full electronic protection
- N+1 redundancy available
- No galvanic isolation



This rugged, industrial quality step down DC-DC regulator uses field-proven technology to generate the required output power. The design is based on topology that has a proven track record in numerous heavy-duty applications. The unit steps a 400–800Vdc input voltage to 300Vdc, or similar voltage at very high efficiency. The use of the latest silicon carbide semiconductor technology contributes to 97-98% conversion efficiency, allowing low heat dissipation and high power density in the existing F3W enclosure size. Cooling is by two long-life built-in fans on one side of the unit, with additional conduction via base plate to a heat-sinking surface. Applications include generating a stable regulated output voltage from a wide range input voltage, stabilizing the voltage at the end of a long cable, or generating a stable suitable voltage for motor drive units. A fully encapsulated version of this design for operation in extreme environments is also available.

SPECIFICATIONS

<p>Input Voltage 600Vdc nominal 400 - 800Vdc operating range Other input ranges on request</p> <p>Input Protection Inrush current limiting Varistor Reverse polarity protection by series diode Internal safety fuse Lower voltage than specified minimum input will not damage unit</p> <p>Isolation 3000VDC input/output to chassis Input and output returns are common.</p> <p>Standards Designed to meet EN 60950-1 and corresponding standards</p> <p>EMI EN55022 Class A with margins</p> <p>Switching Frequency 55kHz ±3kHz</p>	<p>Output Voltage 300Vdc/10A Output return is common with input return</p> <p>Redundancy diode Not installed Available as option</p> <p>Line/Load Regulation ±1% combined from zero load to full load</p> <p>Dynamic Response Max 5% voltage deviation for 10% to 50% load step, with better than 1msec recovery time</p> <p>Output Ripple / Noise Better than 300mVrms or 900pp (20MHz BW)</p> <p>Output Overload Protection Thermal shutdown with automatic reset in case of insufficient cooling Current Limit set to: 11A ± 0.8A</p> <p>Output Overvoltage Protection Transzorb clamp</p>	<p>Efficiency 97% at full load depending on input/output configuration</p> <p>Operating Temperature 0 to +55°C cold-plate temperature for full specification</p> <p>Temperature Drift 0.03% per °C over operating temperature range</p> <p>Cooling Forced air by two high quality built-in fans</p> <p>Environmental Protection Ruggedizing Conformal coating Heavy ruggedizing available on request</p> <p>Shock/Vibration IEC 61373 Cat 1 A&B</p> <p>Humidity 5-95% non-condensing</p> <p>MTBF 130,000 hours @ 45 °C (fans excluded) Demonstrated MTBF is significantly higher</p>	<p>Indicators None</p> <p>Control Input None on standard version Available as option</p> <p>Alarm Outputs None. Available as option</p> <p>Package/Dimensions (W x H x L) F3W 157 x 65 x 295 mm (6.2" x 2.5" x 11.6") including terminal block and mounting flanges Mounting holes are clear</p> <p>Weight 2.3 kg (5 lbs)</p> <p>Connections 12-pole barrier type terminal block with 3/8" spacing</p> <p>RoHS Compliance Compliant</p> <p>Warranty Two years subject to application within good engineering practice Contamination related failures and shipping costs excluded.</p>
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The specifications on this data sheet are generic and are subject to change. Enhancements to these specifications can be provided upon request.

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